IN THE CLAIMS:

1. (Previously Presented) A high-power quick connector assembly comprising:

a first connector having a stem portion and a collar portion connectable to a welding cable, the stem portion having a shank segment extending an axial length of the stem portion and a threaded segment; and

a second connector having a recess formed therein, the recess constructed to receive the stem portion of the first connector and engage the shank segment and the threaded segment.

2. (Original) The high-power quick connector assembly of claim 1 wherein the stem portion of the first connector further comprises a pair of planar surfaces truncating opposing sides of the stem portion.

3. (Original) The high-power quick connector assembly of claim 1 wherein the first connector is rotatable relative to the second connector.

4. (Original) The high-power quick connector assembly of claim 3 wherein the first connector is rotatable relative to the second connector by approximately 90 degrees.

5. (Original) The high-power quick connector assembly of claim 1 further comprising a plurality of threaded holes formed in the collar portion of the first connector.

6. (Original) The high-power quick connector assembly of claim 1 wherein the second connector further comprises a threaded section formed about a distal end of the recess.

7. (Previously Presented) The high-power quick connector assembly of claim 1 wherein the recess of the second connector further comprises a generally circular section constructed to receive the shank segment of the first connector.

8. (Original) The high-power quick connector assembly of claim 1 incorporated into a welding-type device wherein the first connector is attached to a welding cable and the second connector is rigidly attached to the welding-type device.

9. (Original) The high-power quick connector assembly of claim 1 wherein at least one of the first connector and the second connector are constructed from at least one of a tellurium copper material, a sulfur copper material, and a chromium copper material.

10. (Original) The high-power quick connector assembly of claim 1 wherein the assembly is constructed to maintain a temperature change of less than approximately 40 degrees when subjected to a current of approximately 700 amps.

11. (Previously Presented) The high-power quick connector assembly of claim 1 further comprising at least one shoulder extending about the shank segment of the stem portion of the first connector.

12. (Previously Presented) The high-power quick connector assembly of claim 11 wherein the recess of the second connector has a groove formed thereabout constructed to engage the at least one shoulder of the shank segment of the first connector.

13. (Previously Presented) The high-power quick connector assembly of claim 11 wherein the recess of the second connector has a first diameter similar to a diameter proximate the at least one shoulder of the shank segment of the first connector and a second diameter similar to a diameter of the threaded segment of the stem portion of the first connector, wherein the first diameter of the recess is greater than the second diameter of the recess.

14. (Previously Presented) The high-power quick connector assembly of claim 11 wherein the at least one shoulder of the stem portion mechanically and electrically connects the stem portion of the first connector to the second connector and the threaded segment of the stem portion of the first connector mechanically and electrically connects the stem portion of the first connector to the second connector.

15. (Original) The high-power quick connector assembly of claim 14 wherein the recess of the second connector further comprises a threaded portion having at least one channel formed thereacross, the at least one channel constructed to allow the at least one shoulder to pass therethrough.

16. (Original) The high-power quick connector assembly of claim 1 wherein the stem portion of the first connector further comprises a channel formed therein.

17. (Original) The high-power quick connector assembly of claim 16 wherein the second connector further comprises a pin extending into the recess of the second connector and constructed to engage the channel formed in the stem portion of the first connector.

18. (Original) The high-power quick connector assembly of claim 16 wherein the channel extends in a first direction generally axially along the stem portion and in a second direction generally circumferentially about the stem portion of the first connector.

19. (Original) A quick connector assembly for a welding-type device comprising:

a cable adapter connectable to a welding cable and having a cable end and a welding device end;

a device adapter constructed to engage the welding device end of the cable adapter and comprising:

a body having a first end and a second end;

a recess extending into the body from the first end;

a threaded section formed in the recess proximate the first end;

a smooth section formed in the recess between the threaded section and the second end.

20. (Original) The quick connector assembly of claim 19 wherein at least one of the cable adapter and the device adapter are at least partially constructed from at least one of a tellurium copper alloy, a sulfur copper alloy, and a chromium copper alloy.

21. (Original) The quick connector assembly of claim 19 wherein the device adapter further comprises another recess extending into the body from the second end and fluidly connected to the first recess.

22. (Original) The quick connector assembly of claim 21 wherein the body of the device adapter further comprises a first threading formed about an outside surface about the second end and a second threading formed about a circumference of the another recess.

23. (Original) The quick connector assembly of claim 19 further comprising an annular groove formed on an exterior surface of the body of the device adapter between the first and second ends.

24. (Original) The quick connector assembly of claim 19 wherein the device adapter further comprises a ledge formed in the recess generally between the threaded section and the smooth section.

25. (Original) The quick connector assembly of claim 19 wherein the device adapter further comprises a first channel and a second channel extending axially through the threaded section formed in the recess.

26. (Original) The quick connector assembly of claim 25 wherein the first and second channels are on generally opposite sides of the threaded section of the recess.

27. (Original) The quick connector assembly of claim 19 wherein the welding device end of the cable adapter further comprises an unthreaded portion and a threaded portion.

28. (Original) The quick connector assembly of claim 27 wherein the unthreaded portion is closer to an end of the cable adapter than the threaded portion.

29. (Original) The quick connector assembly of claim 19 wherein the device adapter is constructed to be connected to a device capable of outputting a power signal suitable for welding and the cable adapter is arranged to communicate the power signal to the welding cable.

30. (Original) The quick connector assembly of claim 29 wherein the power signal suitable for welding is capable of sustained currents of approximately 700 amps.

31. (Original) The quick connector assembly of claim 19 wherein the cable adapter and the device adapter are fully connectable within one wrist-turn rotation therebetween.

32. (Original) The quick connector assembly of claim 19 wherein the threaded section of the recess of the device adapter has a pair of channels extending across the threaded section, the channels having a diameter similar to a diameter of the smooth section formed in recess and less than an inner diameter of the threaded section.

33. (Original) The quick connector assembly of claim 19 wherein the welding device end of the cable adapter includes a shouldered shank at an end thereof and a threaded section between the shouldered shank and the cable end of the cable adapter.

34. (Original) The quick connector assembly of claim 33 wherein the shouldered shank includes a pair of shoulders extending from generally opposite sides thereof.

35. (Original) The quick connector assembly of claim 33 further comprising a pair of planar surfaces extending along generally opposite sides of the shouldered shank and the threaded section of the cable adapter.

36. (Original) The quick connector assembly of claim 33 wherein the shouldered shank of the cable adapter is constructed to pass uninterruptingly across the threaded section of the device adapter and engage the smooth section upon rotation therebetween.

37. (Original) The quick connector assembly of claim 33 wherein an outer diameter of the shouldered shank is greater than an outer diameter of the threaded section of the cable adapter and is greater than an inner diameter of the threaded section of the device adapter.

38. (Original) The quick connector assembly of claim 19 further comprising a pin extending into the recess of the device adapter generally between the threaded section and the smooth section.

39. (Original) The quick connector assembly of claim 19 wherein welding device end of the cable adapter further comprises an unthreaded portion having a groove extending from an end of the cable adapter to a threaded portion of the cable adapter.

40. (Original) The quick connector assembly of claim 29 wherein the cable adapter further comprises a groove formed in the unthreaded portion, the groove having an axial section extending generally axially along the unthreaded portion and a circumferential section extending generally circumferentially about the unthreaded portion.

41. (Original) The quick connector assembly of claim 40 wherein the circumferential section of the groove is positioned between the unthreaded portion and the threaded portion.

42. (Original) A method of forming a high-power electrical connection comprising:

providing a receptacle having a first connection portion and a second connection portion;

providing a plug having a first engagement portion constructed to electrically communicate with the first connection portion of the receptacle and a second engagement portion constructed to electrically communicate with the second connection portion upon rotation therebetween wherein a surface area of the first engagement portion is less than a surface area of the second engagement portion.

43. (Original) The method of claim 42 further comprising forming a plurality of threads about an inner diameter of the second connection portion of the receptacle and a plurality of threads about a periphery of the second engagement portion of the plug.

44. (Original) The method of claim 42 further comprising attaching the receptacle to a welding-type power source configured to generate a power signal suitable for welding.

45. (Original) The method of claim 42 further comprising locking the plug to the receptacle in less than 100 degrees of rotation between the plug and the receptacle.

46. (Original) The method of claim 45 further comprising passing at least 700 amps through the locked plug and receptacle.

47. (Original) A method of manufacturing a high-power quick connector assembly comprising:

forming a receiver having a first internal profile and a second internal profile; and

forming a plug having a first external profile constructed to pass the second internal profile of the receiver and engage the first internal profile of the receiver, and a second external profile constructed to engage the second internal profile of the receiver upon rotation therebetween.

48. (Original) The method of claim 47 further comprising providing at least one of a tellurium copper material, a sulfur copper material, and a chromium copper material for forming at least one of the receiver and plug.

49. (Original) The method of claim 47 further comprising forming a plurality of threads about the second internal profile of the receiver and the second external profile of the plug.

50. (Original) The method of claim 49 further comprising forming a groove across the plurality of threads of the receiver.

51. (Original) The method of claim 47 further comprising forming an annular groove about an outer surface of the receiver.

52. (Original) The method of claim 47 further comprising forming a recess in the plug for receiving a weld cable at an end generally opposite the first external profile.

53. (Original) The method of claim 52 further comprising forming a plurality of threaded openings through the plug into the recess.

54. (Original) The method of claim 47 further comprising forming a plurality of threads about an internal surface and forming a plurality of threads about an external surface of the receiver about an end generally opposite the second internal profile.

55. (Original) The method of claim 47 further comprising attaching the receiver to a power source capable of generating a power signal suitable for welding.

56. (Original) The method of claim 55 wherein the power signal suitable for welding has a range from approximately 1 amp to approximately 700 amps.

57. (Original) The method of claim 47 further comprising forming a rib extending from the first external profile of the plug.

58. (Original) The method of claim 57 wherein a majority of the second internal profile of the receiver has a diameter that is less than a diameter of the rib extending from the first external profile of the plug.

59. (Original) The method of claim 47 further comprising forming a groove in the first external profile of the plug.

60. (Original) The method of claim 47 further comprising positioning a pin in the receiver generally between the first internal profile and the second internal profile.

61. (Original) A high-power quick connector assembly for a welding-type apparatus comprising:

means for receiving a weld cable;

means for connecting the receiving means to a power source, the means for connecting including:

first attaching means having a contact surface area; and

second attaching means having a contact surface area that is greater than the contact surface area of the first attaching means.

62. (Original) The high-power quick connector assembly of claim 61 wherein the second attaching means includes a plurality of threads about the contact surface area of the second attaching means.

63. (Original) The high-power quick connector assembly of claim 61 wherein the receiving means further comprises first securing means for engaging the first attaching means and second securing means for engaging the second attaching means.

64. (Original) The high-power quick connector assembly of claim 61 wherein at least one of the receiving means, connecting means, attaching means, and engaging means are constructed from a material capable of carrying 700 amps with less than a 40 degree temperature increase.

65. (Original) The high-power quick connector assembly of claim 63 wherein the contact surface area of the first attaching means is generally smooth and has at least one lip extending about a circumference at an end thereof.

66. (Original) The high-power quick connector assembly of claim 65 wherein the at least one lip of the first attaching means is constructed to engage the first securing means and the second securing means has a plurality of threads formed thereabout constructed to engage a plurality of threads formed about the second attaching means.

67. (Original) The high-power quick connector assembly of claim 61 wherein the first attaching means has a diameter that is larger than a common diameter of the second attaching means and is located further from an end of the connecting means than the second attaching means.

68. (Original) The high-power quick connector assembly of claim 61 wherein the contact surface area of the first attaching means is generally smooth and has a groove formed therein.

69. (Original) The high-power quick connector assembly of claim 61 wherein a first securing means of the receiving means has a pin extending therefrom constructed to engage a groove formed in the first attaching means and a second securing means of the receiving means has a plurality of threads formed thereabout constructed to engage a plurality of threads formed about the second attaching means.

70. (Original) A connector assembly comprising:

a cable connector connectable to a weld cable;

an output connector electrically connectable to a power source configured to generate a power signal suitable for welding applications; and

wherein at least one of the cable connector and output connector are constructed from at least one of a tellurium copper material, a sulfur copper material, and a chromium copper material.

71. (Original) The connector assembly of claim 70 wherein the output connector is engageable with the cable connector from an initial position to a fully engaged position in less than 180 degrees of rotation.

72. (Original) The connector assembly of claim 70 wherein the power source is constructed to generate a power signal suitable for welding with up to approximately 700 amps.

73. (Original) The connector assembly of claim 70 wherein the output connector has a path formed therethrough constructed to circulate a cooling flow through the connector assembly.

74. (Original) The connector assembly of claim 70 further comprising an insulator positioned about the output connector and constructed to be secured to a housing positioned about the power source.

75. (Original) The connector assembly of claim 74 wherein the insulator further comprising a first body having a boss and a second body having a recess, the boss of the first body constructed to engage the housing and be snuggly received in the recess of the second body.

76. (Original) The connector assembly of claim 70 wherein the cable connector further comprises a cable portion connectable to the weld cable and a stud portion engageable with the output connector, the stud portion having an unthreaded portion and a threaded portion.

77. (Original) The connector assembly of claim 73 wherein the output connector further comprises an unthreaded portion constructed to engage the unthreaded portion of the cable connector and a threaded portion constructed to engage the threaded portion of the cable connector.

78. (Original) The connector assembly of claim 77 wherein the unthreaded portion of the cable connector further comprises a pair of shoulders extending therefrom constructed to snuggly engage the unthreaded portion of the output connector upon rotation therebetween.

79. (Original) The connector assembly of claim 78 wherein the threaded portion of the output connector further comprises a pair of channels constructed to allow uninterferred passage of the pair of shoulders of the cable connector through the threaded portion of the output connector.

80. (Original) The connector assembly of claim 78 wherein the cable connector is not rotatable relative to the output connector when the pair of shoulders are generally aligned with the threaded portion of the output connector.

81. (Original) The connector assembly of claim 78 wherein an outer diameter of the pair of shoulders is greater than an outer diameter of the threaded portion of the stud portion of the cable connector.

82. (Original) The connector assembly of claim 70 wherein the output connector further comprises a locking pin constructed to engage a locking groove formed in the cable connector.

83. (Original) The connector assembly of claim 82 wherein the locking groove includes a first portion that extends axially along the cable connector and a second portion that extends circumferentially about the cable connector.

84. (Original) The connector assembly of claim 82 wherein the cable connector further comprises a threaded section having an outer diameter that is greater than a diameter of a portion of the cable connector having the groove formed therein.

85. (Original) A weld-power quick connector comprising:
a receptacle having a recess formed therein;
a cable connector constructed to connect to a weld cable;

a stud extending from the cable connector constructed to be received in the recess of the receptacle, the stud having a threaded portion and a shoulder portion wherein the shoulder portion is located closer to an end of the cable connector than the threaded portion and has a diameter that is greater than an outer diameter of the threaded portion.

86. (Original) The weld-power quick connector of claim 85 wherein the recess has a threaded section and smooth section wherein the threaded section is located closer to an end of the receptacle than the smooth section.

87. (Original) The weld-power quick connector of claim 85 wherein the threaded section of the recess engages the threaded portion of the stud and the smooth section engages the shoulder portion of the stud upon rotation of the cable connector relative to the receptacle thereby receiving the cable connector to the receptacle.

88. (Original) The weld-power quick connector of claim 86 further comprising at least one channel formed in the threaded section of the recess constructed to allow passage of the shoulder portion of the stud therethrough.

89. (Original) The weld-power quick connector of claim 85 wherein a pair of generally planar surfaces truncate generally opposite sides of the stud of the cable connector.

90. (Original) The weld-power quick connector of claim 85 wherein the cable connector is engageable with the receptacle from an inserted position to a locked position with a single-grip rotation therebetween.

91. (Original) The weld-power quick connect of claim 85 wherein the shoulder portion of the stud has an outer diameter that is greater than an inner diameter of a threaded section of the recess of the receptacle and is engageable therebehind.

92. (Original) The weld-power quick connector of claim 85 wherein at least one of the receptacle and cable connector are constructed from a tellurium copper material.

93. (Original) A high-power quick connector assembly comprising:

a receiver configured to be connected to a welding-type device and having a first tubular section having a diameter and a second tubular section having a diameter greater than the diameter of first tubular section;

a plug constructed to be connected to a weld cable and having a stud, the stud having a first outer diameter substantially similar to the diameter of the first tubular section of the receiver, and a second outer diameter substantially similar to the diameter of the second tubular section of the receiver, the second outer diameter of the stud having a plurality of threads formed thereabout.

94. (Original) The high-power quick connector assembly of claim 93 further comprising a plurality of threads formed about the second tubular section of the receiver and constructed to engage the plurality of threads of the stud.

95. (Original) The high-power quick connector assembly of claim 94 wherein rotation of the plug relative to the receiver engages the threads of the receiver with the threads of the plug in a locking fashion.

96. (Original) The high-power quick connector assembly of claim 93 wherein the plug is rotatable relative to the plug by approximately 90 degrees.

97. (Original) The high-power quick connector assembly of claim 93 further comprising a groove formed in the first outer diameter of the stud.

98. (Original) The high-power quick connector assembly of claim 97 wherein the groove has a first segment that extends longitudinally from an end of the stud and a second segment that extends circumferentially about the first outer diameter.

99. (Original) The high-power quick connector assembly of claim 93 wherein the threads about the second outer diameter of the stud are truncated on opposing sides of the second outer diameter.

100. (Original) The high-power quick connector assembly of claim 93 wherein the receiver further comprises a pin positioned at a ledge formed between the first tubular section and second tubular section.

101. (Original) The high-power quick connector assembly of claim 93 wherein the plug further comprises an orifice constructed to receive the weld cable therein.

102. (Original) The high-power quick connector assembly of claim 93 wherein the welding-type device is capable of generating a sustained current of 700 amps.

103. (Original) The high-power quick connector assembly of claim 102 wherein the second outer diameter of the stud has a greater surface area than the first outer diameter of the stud.

104. (Original) The high-power quick connector assembly of claim 93 wherein the plug is rotatable relative to the receiver from an initial position to a fully engaged position upon approximately 90 degrees of rotation wherein rotation of the plug engages the plurality of threads of the plug with a plurality of threads of the receiver.

105. (Original) The high-power quick connector assembly of claim 93 wherein at least one of the plug and receiver are constructed from a material having conductivity characteristics generally similar to copper and machineability characteristics generally similar to brass.

106. (Previously Presented) A quick-connect connector assembly comprising:

a first connector electrically connectable to a second connector and securable thereto upon rotation of one of the first connector and the second connector relative to the other of the first connector and the second connector and wherein at least one of the first and the second connector are constructed from a material having an electrical conductivity of at least 80% of that of copper and having a machineability of at least 75% of that of brass.

107. (Original) The quick-connect connector assembly of claim 106 wherein the material has a yield strength of at least 40 Kpsi.

108. (Original) The quick-connect connector assembly of claim 106 wherein the first connector rotatably engages the second connector from an insert position to a fully engaged position in less than approximately 180 rotational degrees from the insert position.

109. (Original) The quick-connector connector assembly of claim 106 wherein the first connector electrically couples a torch to a power source that is electrically coupled to the second connector when the first and the second connectors are engaged.